

BEFORE THE  
POSTAL RATE COMMISSION  
WASHINGTON, D. C. 20268-0001

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POSTAL RATE AND FEE CHANGES, 2000

Docket No. R2000-1

JOINT BRIEF  
CONCERNING  
CITY CARRIER COST ATTRIBUTION  
OF

ADVO, INC.  
ALLIANCE OF NONPROFIT MAILERS  
AMERICAN BUSINESS MEDIA  
ASSOCIATION FOR POSTAL COMMERCE  
ASSOCIATION OF AMERICAN PUBLISHERS  
COALITION OF RELIGIOUS PRESS ASSOCIATIONS  
DIRECT MARKETING ASSOCIATION  
DOW JONES & COMPANY, INC.  
MAGAZINE PUBLISHERS OF AMERICA, INC.  
MAIL ORDER ASSOCIATION OF AMERICA  
THE MCGRAW-HILL COMPANIES, INC.  
NATIONAL NEWSPAPER ASSOCIATION  
PARCEL SHIPPERS ASSOCIATION  
AND  
TIME WARNER INC.

September 13, 2000

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I STATEMENT OF POSITION AND SUMMARY OF ARGUMENT

In this case, the Postal Service has offered an Engineered Standards study ("ES study") conducted under the direction of witness Raymond (USPS-T-13) and analyzed by witness Baron (USPS-T-12) as the sole foundation for a dramatic shift in estimated proportions of load time and access time as a percentage of city

carrier street time activity, which would hugely increase load time costs attributed to Periodicals, Standard(A), and Standard(B) mail.

As transmogrified by witnesses Raymond and Baron, the ES study data produce an estimate of total load time costs 60 percent higher than in Docket No. R97-1. Conversely, estimates of access costs (foot plus curblin) are 30 percent lower and collection costs 69 percent lower than in Docket No. R97-1. Raymond's and Baron's results increase estimated load time as a proportion of total street time by 48 percent. For residential park and loop routes (the largest route type), access time as a proportion of total street time decreases by 38 percent and load time increases by an astonishing 74 percent.<sup>1</sup> The implications of these results--e.g., that residential park and loop carriers now spend as much time loading mail into receptacles and they do moving between delivery points--strain credulity.

A broad coalition joined to oppose the use of Raymond's study as a basis for attributing carrier costs, sponsoring the testimony of Antoinette Crowder (MPA-T-5) and Keith Hay (MPA-T-4), which demonstrated that the ES study is fundamentally unsuitable for estimating carrier street time costs and that Raymond's and Baron's far-reaching recategorizing and reformulating of the ES data for that purpose suffered from grave methodological deficiencies and produced results that are simply not credible. The same parties subsequently jointly moved to strike Raymond's and Baron's testimony founded on the ES study from the record of this proceeding.<sup>2</sup>

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<sup>1</sup> These comparisons are based on the USPS base year cost workpapers for witnesses Alexandrovich in Docket No. R97-1 (USPS-T-5) and Meehan in Docket No. R2000-1 (USPS-T-11), Workpaper B, Worksheet 7.0.4.1.

<sup>2</sup> Motion to Strike Testimony of Postal Service Witnesses Baron (USPS-T-12) and Raymond (USPS-T-13) in Behalf of Advo, Inc., Alliance of Nonprofit Mailers, American Business Media, Association for Postal Commerce, Association of American Publishers, Coalition of Religious Press Associations, Direct Marketing Association, Inc., Dow Jones & Company, Inc., Magazine

These parties--who have been active in the Commission's proceedings since the passage of Postal Reorganization in 1970--now appear as signatories to this brief to urge the Commission to require a higher standard of evidence, argumentation, and professionalism on the fundamental ratemaking issue of cost attribution than is represented by witness Raymond's unplanned, undocumented, unverifiable "study" of carrier costs.

In the next section of this brief, we request that the Commission review and reverse the Presiding Officer's ruling denying our motion to strike Raymond's and Baron's testimony regarding the ES study.

If, based on the latitudinarian standards of evidence permissible in administrative proceedings, the Commission concludes that it was proper to admit that testimony, there will still remain a great distance to be traveled before arriving at the conclusion that the ES study is sufficiently correct in its methodology, complete in its documentation, and careful in its execution--in a word, sufficiently reliable--to warrant its adoption as the basis for attributing a large percentage of the Postal Service's total attributable costs. Section III of this brief reviews the serious deficiencies of the ES study in each of these respects and argues that the Commission should not use the study as a basis for carrier cost attribution.

If the Commission nevertheless accepts the ES study as a basis for carrier cost attribution, it is obliged to use the results of that study in a self-consistent, methodologically rational fashion. Extensive, uncontradicted record evidence demonstrates that the ES data from which witness Baron derives his new estimates of carrier load time as a proportion of carrier street time also imply new, lower estimates of the volume variability of load time.

The new variabilities, along with complete documentation of how they were derived, were placed into evidence after the Postal Service's direct case, but months before the close of the record, providing ample time for any participant to review and challenge them. Tr. 18/7107-25; USPS-LR-I-292. Witness Baron testified during the hearing on his direct testimony that the new estimates derived from the ES data are the appropriate variabilities to use with his new proportions for the components of street time based on the same data. Tr. 18/18745. Witness Crowder (MPA-T-5), based on an independent assessment of the ES data, testified to the same effect. Tr. 32/16190. In the more than three months since that testimony was filed, no participant has expressed opposition to the view that these are the only appropriate variabilities to use in conjunction with the Raymond ES study, nor has any participant raised any question in written discovery or on oral cross-examination regarding Baron's testimony sponsoring the new variability estimates.

As discussed more fully in section IV below, the absence of questions from any quarter regarding the Baron volume variability estimates is what was to be expected. If Raymond's ES study is accepted as a basis for carrier cost attribution, and if reliable volume data are available for the same sample (as is the case), no argument exists for the use of any other variability estimates that is not irrational, arbitrary, or self-contradictory.

Baron's newly estimated volume variabilities mitigate to some extent the harsh impact on Periodicals, Standard(A), and Standard(B) mailers of his newly estimated proportions of carrier street time by component. That is certainly one reason that we support their use, a reason that we hope will commend them to the Commission. But we do not--and the Commission need not--place reliance on that virtue of Baron's variability estimates. On the record of this case, no evidence is even alleged or argument even proffered for adopting Baron's estimated

proportions of carrier street time components but declining to use his estimates from the same data of carrier cost volume variability

Separately, we also support the Postal Service's proposals, presented by witness Baron on rebuttal, to (a) adjust accrued out-of-office costs by route type to offset some of the impact of the ES sampling bias and (b) apply a zero variability estimate to city carrier drive time. Finally, we strenuously oppose any double-counting of the attribution of the possible deliveries effect, as proposed by witness Baron. The Commission's analysis of that issue in Docket No. R97-1 was correct and remains applicable regardless of whether the LTV or ES variability model is used. It should be retained.

II. WITNESS RAYMOND'S ENGINEERED STANDARDS (ES) STUDY DOES NOT MEET THE COMMISSION'S MINIMAL FOUNDATIONAL, DOCUMENTARY AND DUE PROCESS STANDARDS WITH RESPECT TO STATISTICAL EVIDENCE AND SHOULD THEREFORE BE STRICKEN FROM THE RECORD OF THIS PROCEEDING

Pursuant to Commission Rule 32(f), the undersigned parties, all of whom were signatories to the Motion to Strike Testimony of Postal Service Witnesses Baron (USPS-T-12) and Raymond (USPS-T-13) in Behalf of Advo, Inc. *et al.* (filed June 20, 2000), for the reasons stated therein and restated below, hereby appeal to the full Commission the Presiding Officer's ruling denying that motion.<sup>3</sup>

The aforesaid motion to strike Baron's and Raymond's direct testimony, written and oral responses to cross-examination, and library references under their sponsorship relating to the Engineered Standards/Delivery Redesign (ES) Study was grounded on: (1) fundamental defects in the design, documentation, and implementation of the ES study that render it inherently unfit as a basis for

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<sup>3</sup> Presiding Officer's Ruling Denying Motion to Strike from the Record Materials Sponsored by Postal Service Witnesses Baron and Raymond (POR No. R2000-1/89) (July 14, 2000).



cost attribution; and (2) such serious failures in documenting the study and in providing timely, responsive, and accurate answers to discovery and on cross-examination as to constitute a denial of due process to participants seeking to challenge the study. The Motion further argued that these serious defects, notwithstanding the general leniency of the Commission's rules of evidence, brought the ES study within the ambit of Commission precedents excluding or striking similarly flawed statistical studies from the evidentiary record.

Supported by citations to the record documenting each allegation in detail, the Motion described a number of fundamental deficiencies of the ES study as a basis for cost attribution:

- the ES study was designed "to collect actual activities of the city letter carrier and to develop engineered methods and time standards to establish a workload managing system" (USPS-T-13 at 5); that is, it was not designed to collect costing data and there was no intention to use its results for costing purposes until long after the data had been collected;
- the study was not designed with statistically valid sampling frames or confidence limits (in violation of Commission Rule 31(k)(2)(ii)(a) (requiring statistical studies offered in evidence or relied upon as support for other evidence to include a "clear description of the survey design, including the definition of the universe under study, the sampling frame and units, and the validity and confidence limits that can be placed on major estimates");
- documentation of the study's design, methodology, and execution is virtually non-existent; no written instructions or training manuals were provided to data collectors explaining the meaning of the key terms used in the study or how to identify the activities corresponding to those terms; and numerous anomalous entries in the data collected demonstrated that the data collectors in fact did not have a clear, accurate, or consistent understanding of the key terms used in the study (e.g., "delivery point") or the key categories used in carrier costing (e.g., "load time").

The Motion also explained, and documented from the record, that the inadequacy and unsuitability of the ES study for the purpose for which the Postal Service seeks to use it in this case have resulted in a succession of

endlessly changing, mutually contradictory, frequently misleading and ultimately impenetrable explanations of [Raymond's] "methodology." . . . [W]itness Raymond's inconsistent and constantly shifting explanations of how he "studied" carrier costs have made increasingly clear that the "design" and "methodology" of his "study" are being improvised only now, long after the filing of the study's "results" as testimony. . . . [S]evere and persistent deficiencies in the way this evidence has been prepared and presented by the Postal Service have made it impossible for the parties to analyze the evidence and present their evaluation of it within the time remaining in this case.

Motion at 8, 6, 7.

The Motion acknowledged the wide latitude that administrative agencies may exercise in admitting evidence, but nevertheless argued that Raymond's ES study falls within a category of cases where the Commission has exercised its discretion to exclude evidence that falls short of basic standards of probativeness or that lacks sufficient foundation to make effective due process possible:

[T]he hearing requirements of the Administrative Procedure Act, judicial decisions, and the Commission's precedents make clear that there are cases where the Commission has concluded that the option to accept a study's "results into evidence on the theory that its foundational defects can be reflected in the weight it is entitled to is not open to us" and that applicable standards of fair procedure and reasoned decisionmaking require the exclusion of proffered evidence:

[W]e are required to make our determinations on costing questions in a quasi-judicial context. The parties' right to a meaningful hearing on the record, guaranteed by 39 U.S.C. § 3624(a) and 5 U.S.C. §§ 556-557, must be respected. . . .

Thus, "material *that fails to meet basic evidentiary or due process standards* will not be the basis for recommended rates." Order No. 1024 at 2 (emphasis added).

Motion at 3 (*quoting* Docket No. R84-1, PRC Order No. 562 [May 30, 1984]).

The Motion adduced Commission precedents instructing that among such cases are those where "the cumulative weight of the problems associated with [a piece of testimony] effectively foreclose[ ] any possibility of evaluating the materials," those where "a foundation for [proffered testimony], required by the terms of [the Commission's] rules and by the necessity to afford opposing parties a meaningful hearing, has never been provided," and those where "continuing revisions" to a study or the continuing "unavailability of essential information about [a proffered study] make effective analysis and rebuttal . . . impossible in the time remaining to complete a 10-month case." Motion at 3-4 (*quoting* Docket No. R94-1, PRC Order No. 1024 [Aug. 17, 1994], at 3; PRC Order No. 562, Appendix at 1; PRC Order No. 1024 at 12; PRC Order No. 562 at 20).

Our view, stated in the Motion (at 4-5), was that the ES study's

lack of the minimal foundation, documentation, or similar indicia of reliability, in plain contravention of the Commission's foundational requirements for such evidence (*see* section 31[k][1], [2] and [2][ii][b]), makes it impossible "to *independently* discern what, in fact [the study] does, and how it does it" (Order No. 562 at 3), "effectively forecloses any possibility of evaluating the material," and therefore makes it impossible to judge whether the study "is entitled to any weight at all" (Order No. 1024 at 3).

Nothing has occurred since the Motion was filed to alter this view. We therefore respectfully renew our motion to strike the testimony of witnesses Baron and Raymond related to the ES study and, pursuant to Commission Rule 32(f), appeal to the full Commission the ruling of the Presiding Officer denying that motion.

If the Commission decides not to exclude the ES study from the record, the arguments made in our Motion to strike and recapitulated further here nevertheless must be included in the balance in determining what weight, if any, to give to the ES study as an evidentiary basis for attributing carrier costs. The

following section of this brief reviews extensive record evidence supporting the conclusion that no confidence can be placed in the reliability of the ES study for the purpose of carrier cost estimation.

III. WITNESS RAYMOND'S ENGINEERED STANDARDS (ES) STUDY IS NOT RELIABLE FOR AND SHOULD NOT BE USED FOR THE PURPOSE OF ESTIMATING CARRIER COSTS

The heart of the controversy about Raymond's testimony concerns the degree of synonymy between the data to which Raymond has attached the traditional terms of carrier costing ("load time," "access," etc.) and the settled meanings of those terms of ratemaking art. Of course, Raymond's sharply different results from previous studies might be explicable if he were redefining these key terms, but he insisted that he was not doing so. Tr. 18/7410, 7667-68, 7844-53.

Although the ES study was proffered as a study of carrier street time costs, it became increasingly clear as this case progressed that Raymond's purported analysis of carrier costs consists entirely of devising, *ex post facto*, convenient rules of thumb for sorting a pre-existing collection of data *under the terminological headings* appropriate to carrier street time costing. No actual study of that subject was ever designed or performed,<sup>4</sup> no sample for such a study was ever selected,<sup>5</sup>

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<sup>4</sup> A review of USPS LR-I-252 (which, per ADVO/USPS-T13-40, contains all the details of Raymond's work plans) shows that he did not have a plan for identification of carrier activities as defined for ratemaking purposes. Indeed, he admits that he did not even know the costing definitions used for ratemaking purposes (e.g., load, run, collect) until after the ES data were collected. Tr. 18/7607-08, 7668-69. Furthermore, he also admits that there was no systematic written or oral guidance given to his data collectors regarding the identification and distinctions among the various barcodes they had to use to identify the carrier activities being observed. Tr. 18/7677-78, 7680, 7683-85, 7688, 7700. And he did not even review the FAT, CAT and LTV data studies to see if they comported with his definitions. Tr. 18/7388-89, 7480. The barcodes associated with each tally, of course, were what Raymond ultimately used to determine the cost component to which that tally should be allocated.

<sup>5</sup> See Tr. 27/13080 (Hay) ("for samples to contain worthwhile and reliable information about the population, each unit of the sample must be selected at random, requiring that each element of

I have reviewed a sample of ES videotapes of carrier activities on residential park & loop routes, recorded on the same day the ES observers were collecting their work sampling data. This analysis shows that the observation codes recorded by the ES data collectors and allocated by witness Raymond to the load time category are not consistent with the load time definition used for ratemaking, and generally measure a time that is considerably greater than true load time.

Tr. 32/16148.

"Data" purporting to have been collected in a study suitable for analyzing carrier costs by component and the purported "results" of statistical analysis of those data have come forth by the bushel in this proceeding. However, these data and statistical analyses possess no--that is, not any--measurable level of confidence or independently verifiable statistical significance with respect to the subject allegedly studied.<sup>10</sup> Thus, however bountiful the harvest may at first have appeared, it has proved impossible not just to winnow the wheat from the chaff, but to tell whether it contains anything but chaff.

MPA witness Hay, the technical editor of the Kearney Data Quality Study, observed in a devastating critique of witness Raymond's study that--aside from some clumsy *ad hominem* insinuations that fizzled into nothingness--remained un rebutted when the record closed:<sup>11</sup>

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<sup>10</sup> See Tr. 3216164 (Crowder) (for a statistical study to be reliable, it must establish "acceptable confidence limits for the desired results"; "[n]o confidence levels can be ascribed to [the data of the ES Study], because no sample design was made").

<sup>11</sup> During the first several months of the case, the Postal Service appeared to suggest that the use of the ES study as a basis for attributing carrier costs was, if not actually urged on it by the authors of the Kearney Data Quality Study, at least undertaken in furtherance of the plain mandate of that study. By the time for filing rebuttal testimony, however, in the conspicuous absence of any of said authors galloping to his defense, Mr. Raymond seems to have decided that the authors of the Data Quality Study knew nothing about his ES study and were therefore incompetent to make any pronouncements thereon. Compare USPS-T-12 at 33, n. 43 (Baron) ("The fact that the Engineered Standards/Delivery Redesign project has developed an up-to-date operational database specifically intended to quantify the proportions of time carriers spend performing different tasks is one reason the A.T. Kearney Study recommended that the Postal

This is an instance of a researcher fitting the observation tallies, i.e., "the answers" into a new set of questions – the six cost categories. How well he has done this is a matter of conjecture and divination. It appears as if the researcher is doing the complete exercise *backwards*. For reasons earlier discussed, it is not possible to offer any level of confidence in the sample or the parameter estimates arising therefrom.

Tr. 27/13086.

Raymond has never offered a statistically logical explanation for his choice of the LR-I-163 dataset given to witness Baron. Instead, he has sometimes explained his choice tautologically:

[In my direct testimony] I did not specify which other records are in the entire database that were left out of the dataset. I only have described the data that was given to Witness Baron.

Tr. 18/7936.

Sometimes his explanations have been confused and self-contradictory.

*Compare* for example, Tr. 18/7936 (where Raymond testified that records "have not been purged from our database") *with id.* at 7938 (where, after he was reminded that, in response to MPA/USPS-T-13-48, he had stated that "[r]ecords were purged from the database," he testified: "I think I have the opportunity to say that maybe here's another one that I need to make a correction on, because the original dataset we have has all the records in it that were made from the field entries. . . . They were not purged") *and with id.* ("Maybe I was confused at this point, but I look at the study as I am going through these interrogatories and I may have got confused between what is in the entire engineering dataset").

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Service consider using these data to update its segment 7 cost analysis") *with* Tr. 39/17920 (Raymond) ("Prior to the completion of A.T. Kearney's Data Quality Study . . . witness Hay and other members of the Data Quality Study Team had such extremely limited access to the ES study data, design, implementation, methods, and reports, that it would have been impossible for them to conduct a valid assessment of the suitability of the work sampling data for particular purposes, such as use in a postal rate case"). What Raymond fails to explain is what the authors of the Data Quality Study did not know then that, had they known it, would have led them to conclude that Raymond's study is suitable for carrier cost attribution.

Sometimes his explanations have been inconsistent with the facts established by his own testimony. For example, his response to a question raised at the hearing on his direct testimony about the reasons for excluding numerous route-days from the data provided to witness Baron lists a number of route-days that he says were excluded because they were "partial route less than 8 hours," "partial scans," or "multiple carriers on route." Tr. 46-D/21746. But a subsequent post-hearing response shows that most of these route-days were substantially longer and had more tallies than many of the route-days that he included in his LR-I-163 dataset (ranging from seven to eleven hours long, with from 70 to 110 tallies). *Compare* Tr. 46-D/27138 *with* Tr. 18/7915-31.

Against these serious and fundamental deficiencies in the ES study's design, its execution, and in the manipulation and interpretation of the data it produced, all that can be said in its favor is that the data used were collected more recently than the LTV/STS data relied on in previous cases, which were collected in 1985. That would be a considerable virtue in a properly conducted study, but it loses all significance when there are myriad indications of the study's unreliability and no possibility of verifying its claims. Moreover, the alternative is not mere guesswork or reliance on an arbitrary assumption.<sup>12</sup> Rather, as witness Crowder pointed out,

[T]he LTV models . . . have been the best available means for determining how system-wide changes in volume, mail mix, and possible deliveries per stop impact load time per stop. They also were constructed using a clear and reliable definition of load time, while the same cannot be said for the ES data. Certainly they provide a reasonable general indication of how much true load time should have changed

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<sup>12</sup> Compare the assumption of 100 percent volume variability of mail processing costs, established in Docket No. R71-1 in default of any probative evidence of actual variability. See USPS-T-15 at 10-11 (Bozzo).

since 1986, and cast serious doubt on the validity of the ES load time estimates.

Tr. 32/16184-85.

In these circumstances, it is difficult to discern any reason for adopting the ES study as a basis for carrier cost attribution, other than frustration with the Postal Service's failure to update the aging LTV and STS studies. Legitimate though that frustration may be, the effect of accepting Raymond's shoddy substitute would probably postpone indefinitely any effort by the Postal Service to perform a proper update of those studies or to design and conduct new studies on a sound methodological basis. *That*--not use of the ES study data in the way proposed by the Postal Service in this case--is what the Kearney Data Quality Study *actually* recommends. Tr. 27/13091.

For these reasons, we respectfully urge the Commission not to accept witness Raymond's ES study as a basis for attributing city carrier costs.

**IV. IF THE COMMISSION DOES USE WITNESS RAYMOND'S ENGINEERED STANDARDS (ES) STUDY FOR THE PURPOSE OF ESTIMATING CARRIER COSTS, IT MUST ALSO USE THE CORRESPONDING VOLUME VARIABILITIES AND ACCRUED COST ADJUSTMENTS DEVELOPED BY WITNESS BARON FROM THE SAME DATA**

- a. The LTV Volume Variabilities Are Not Commensurate With The ES Accrued Load Time Costs, And Using Both Together Causes An Excessive Attribution Of Load Time Costs That Would Be Methodologically Irrational And Legally Arbitrary

The Postal Service originally filed its load time costing proposal using two disparate data sets to determine city carrier load time variable costs: (1) the ES time proportions to determine accrued time, and (2) the Load Time Variability (LTV) study to identify volume variability. The ES data were collected recently for a non-costing purpose, while the LTV data were collected during 1985 and were



specifically collected to be used together with the 1986 Street Time Survey (STS) time proportions to develop costing for ratemaking purposes.

A comparison of the STS and ES results implies a 49.7% increase in average accrued load time and a 25.5% decrease in accrued curblineline/foot run time. Tr. 32/16179. For 1998, the use of the ES time proportions in place of those from the STS results in a \$970 million increase in accrued load time and a concomitant extremely large increase in attributable load time cost. Tr. 32/16146. These cost changes imply enormous structural changes in the Postal Service system of city carrier routes since 1986 that Postal Service witness Kingsley makes a feeble attempt to explain. USPS-T-10 at 24-28. Witness Crowder addressed each of Kingsley's explanations and demonstrated that, in total, they fall far short of identifying structural changes that could cause such large cost changes. Tr. 32/16180-85. Moreover, nowhere in this case has the Postal Service adequately identified why there are such huge apparent changes. On the other hand, such results are fully explained by the facts that (1) the ES sample is biased toward high-load-time routes and (2) the ES load time tallies measure more than load time as reflected in the Load Time Variability Study. These far more likely explanations are discussed in part c below.

Regardless of the reasons for the disparity between the STS accrued cost results, with which the LTV variabilities are matched, and the ES accrued cost results, it is abundantly clear that the LTV variabilities do not match the ES accrued costs. Crowder fully explains why it is inappropriate to mismatch variability with accrued cost and has demonstrated why USPS original load time analysis overstates volume-variable or attributable load time. Tr. 32/16190-91, 16244-46.

Further, she explained the results of such a mismatch: "[w]hen variability is derived from a functional model that only explains half of the estimated accrued

time for the function, there is an extremely high probability that the estimated accrued time includes much more than what was modeled,” and “to apply the modeled variability to the estimated accrued time would produce” not only a result that “cannot be explained” and has “no meaning,” but “a greatly overstated estimate of variable functional costs.” Tr. 32/16191.

The effects of such a mismatch are obvious from a comparison of the USPS original and revised load time proposals. USPS-T-12 and USPS-RT-12. They are unrebuttable and unrebutted. Accordingly, it is irrational and arbitrary to use the LTV variabilities with the ES level of accrued load costs.

- b. To Develop Reasonable Estimates Of Volume Variable Load Costs, The ES Volume Variabilities Must Be Used With The ES Accrued Cost Estimates; All Pertinent Testimony Of Record Supports The Use Of The ES Variabilities, And No Party Has Expressed Opposition To Their Use

For the reasons explained above, the use of the LTV variability with the ES accrued costs must be rejected, regardless of what other recommendations the Commission may make. Further, those reasons also explain why, if the Commission uses the ES data to determine accrued street time proportions, it must also use the matching volume variability developed from those data. Only a volume variability derived from the same data used to develop the accrued load costs will produce a reasonable estimate of variable costs. As noted above, Crowder explains “the necessity to match accrued costs and variability models in order to avoid severe errors and distortions.” Tr. 32/16190. Even Baron, who originally proposed the use of the LTV variability with the ES accrued load time, now agrees with Crowder that the ES variability should be used with the ES accrued load time. Tr. 43/18704-08. Moreover, the ES variabilities developed by Baron have not been disputed by any party to this proceeding.

c. The ES Tally Data Contain An Extremely Large Systematic Overstatement Of Load Time That Would Be Mitigated By The Use Of Variabilities Derived From The Same Data

Crowder has proven that there is a large systematic overstatement of load time (as defined by the STS/LTV studies) and has also identified some of the sources of that overstatement (e.g., bias in the ES sample selection, slackness in the ES observers' definitions of "load-related" codes, uncertainty as to what precise activities each of the ES tallies really describes, lack of incentive to identify load time as defined by STS/LTV). Her proof is two-fold: analysis of the ES videotapes and use of the ES data in regression models.

Crowder's ES videotape analysis yields results which are remarkably consistent and robust. For simple loop and dismount deliveries, the ES tally ratio of load time to FAT run time was always substantially greater than that directly observable from the ES videotapes, for the same day and time period. Tr. 32/16186-88. The large difference between the ES ratio and the one developed in the MPA analysis is explained by witness Crowder as "the result of data collectors recording non-load carrier activities with codes which Raymond allocated to load time." Tr. 32/16188

The second proof lies in the results of the MPA and USPS regression models developed from the ES data themselves. In all models, there is a large and statistically significant fixed route time which is separate from all volume-related effects. Tr. 32/16188-90. Crowder states that:

If the activities encompassed by the ES load time data only included true load time, then the intercept value and the coefficients for the other related terms would be close to zero and statistically insignificant. This result is expected for true load time, since zero possible deliveries should produce zero load time. Thus, this fixed time identified in the regressions should be considered non-load time that belongs in another out-of-office time component. This non-load time is the results

of data collectors recording non-load carrier activities with codes which Mr. Raymond allocated to load time.

Tr. 32/16190.

These results are fully consistent with the fact that “the ES estimate of accrued load time is 92.3% greater than the LTV estimate of load time, but the USPS ES model variability generates a variable cost that is only 35.8% greater than that for LTV. The lower LTV estimate of accrued load time is associated with 64.0% variability while the substantially higher ES estimate is associated with a 45.2% variability.” Tr. 32/16190. This, concludes Crowder,

is precisely what is expected when the load time estimate being used contains a high proportion of fixed time that cannot be true load time [i.e., LTV-defined load time]. If the ES time proportions are used to disaggregate out-of-office costs, then there is no question that the variability estimate from the USPS ES model produces a more reasonable estimate of variable load time.

Tr. 32/16190.

Again, witness Baron, although careful to avoid conceding that the ES tallies do not accurately measure load time as defined by LTV/STS, agrees with Crowder:<sup>13</sup>

I agree with Ms. Crowder that because the load times in the ES-based regression are derived from the same tallies that produce the Postal Service estimate of accrued load time cost, the variabilities derived from that regression are appropriately applied to that cost. Now, suppose I agree, *arguendo*, that Ms. Crowder also correctly defines this cost as equaling true load time cost plus some substantial accrued access cost. Then the clear implication is that the variabilities derived from the ES-regression are appropriately applied to a cost equal to true load time plus access cost. In other words, whatever the Postal Service measure of accrued load time cost might be, the ES-based regression variabilities are the correct

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<sup>13</sup> Note, however, that Baron slightly mischaracterizes Crowder's analysis. She states that the fixed time in the ES models is fixed route/run time, not access.

variabilities to apply to that cost. The volume-variable costs that this application produces are valid and reliable measures of the volume-variable portions of the accrued cost. They are, specifically, valid measures of volume-variable costs whether the corresponding accrued cost is pure load time cost or load time cost plus a portion of access cost.

Tr. 43/18703.

Accordingly, all parties agree that, if the Commission chooses to recommend the use of the ES data for disaggregation of out-of-office time, then the large systematic bias in that data toward excessive load time would be mitigated by the use of the associated ES variabilities.

d. Witness Baron's Adjustments To The ES Accrued Costs, By Route Type, Would Moderate The Adverse Impact Of The ES Sample's Bias Toward Routes With Atypically High Load Time

Crowder demonstrates that the majority of the ES sample was not selected randomly but rather was biased toward routes from more metropolitan and high-growth areas and toward routes with larger proportions of in-office and load time (i.e., a greater proportion of curblane routes than within the system as a whole and a greater proportion of centralized deliveries for park-and-loop routes than on average within the system). This apparently was required to serve the ES/USPS purposes of saving study expense by excessively clustering samples in high-growth metropolitan areas. Tr. 32/16165-67, 73-77.

Obviously, this bias affects both the ES accrued cost estimate as well as the variability from the ES data. The latter, unfortunately, cannot be corrected. However, because the Postal Service now recognizes the bias in the ES data, it has developed a correction to the ES accrued cost estimates. As Baron states in rebuttal:

I believe Ms. Crowder's argument here is persuasive. Specifically, Ms. Crowder is correct in judging that the

distribution of possible deliveries in the ES tally database across delivery-type categories is significantly different than the corresponding distribution in the population of all city carrier letter routes (Tr. 32/16176-77). The specific differences also bias the new street-time percentages. One important difference is that the percentage of deliveries that are residential curb and residential centralized deliveries is significantly higher in the ES sample than in the population. In addition, the percentage of deliveries that are "residential other" is significantly lower in the sample than in the population. These discrepancies distort the street-time percentage estimates.

Tr. 43/18718-19.

Thus, Baron presents an adjustment which identifies ES out-of-office time proportions by delivery type (rather than route type) and uses them with system-wide delivery-type estimates for each route type. This results in adjusted out-of-office time proportions by route type. Tr. 43/18719-23. As only a partial correction to the acknowledged ES sample bias (Baron, unfortunately, does not recognize that this adjustment does not correct the variability bias), this adjustment should be recommended.

V. THE POSTAL SERVICE'S PROPOSED ZERO DRIVE TIME  
VARIABILITY FOR ROUTINE DISMOUNTS AND LOOPS IS BASED ON  
OPERATIONAL REALITIES AND SHOULD BE ACCEPTED

Drive time is a portion of City Carrier Out-Of-Office run time. In Dockets R90-1 and R94-1, the Commission attributed drive time on park-and-loop route sections using a simplistic estimate of 50% variability of such time with respect to mail weight.<sup>14</sup> In Docket No. R97-1, however, Postal Service witness Michael

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<sup>14</sup> The rationale for this attribution was a simple geometric model that assumed that drive time varies with the number of parking points, which in turn varies with the number of loops/dismounts, which in turn varies with the weight of the mail delivered on those loops/dismounts. Implicit in the model were the assumptions that (a) new loops and dismounts are established only because of the weight of the mail to be delivered, (b) the weight of the mail to be delivered on each loop and dismount is at the carrier's constraint of 35 pounds such that an increase in mail weight would

Nelson refined that analysis. He presented data generally identifying (a) the portion of park-and-loop drive time associated with routine dismounts and loops and (b) the reasons for such routine dismounts and loops. The data for the latter were the result of carrier supervisor responses to a simplistic questionnaire listing generic reasons for the routine loops/dismounts. Nelson then quantified the portion of routine dismounts/loops which the supervisors claimed was "due to volume/weight." Despite the fact that he really did not know how close any of the loops/dismounts were to the carriers' 35-pound weight constraint, for the portion deemed to be "due to volume/weight," he assumed those routine loops/dismounts were close to their weight constraint and would have to be split if a marginal amount of mail weight were added to them. His estimates were 100% variability for routine loops and 40.99% for routine dismounts.

In this case, Nelson, appearing on behalf of MPA et al., has revised his previous analysis of drive time associated with routine dismounts to recognize the following operational realities: (a) existing routine dismounts will not change even if delivered volume/weight increases on those dismounts and (b) stops that would become new routine dismounts due to volume/weight increases are currently served by routine loops, which moderates the need to add new routine loops. Accordingly, he now estimates a zero variability for such drive time. But, he still retains the estimate of 100% variability for routine loops deemed to be "due to volume/weight". His revised estimate is now 32.15%. Tr. 28/13414. On rebuttal, Baron also proposes a zero variability for routine dismounts, stating that Postal Service operations analysts have informed him that routes are generally planned so that virtually all dismounts stops have excess capacity and/or can be accommodated by bulk containerization. Tr. 43/18727-28.

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cause the carrier to split each loop/dismount into two portions, and (c) there is no carrier time tradeoff between driving and walking.

Separately, with respect to the variability associated with routine loops, exceptionally useful data from the Engineered Standards database have emerged and been presented by witnesses Baron and Crowder (ADVO-RT-1). These data are measurements of city carrier satchel weights taken at the beginning of routine carrier walking loops. They demonstrate that, for all practical purposes, there is zero probability that a marginal increase in volume/weight delivered on those loops would cause the satchel to exceed its 35-pound weight constraint and require creation of a new loop. Further, in both this case and in Docket No. R97-1, Crowder has provided operational explanations of why the average weight per loop is substantially less than the 35-pound weight constraint and weight/volume has very little impact on the number of loops/dismounts. Tr. 32/16177-79; Docket No. R97-1, Tr. 34/18325-29. These include the practical effects of route restructuring, geographic and terrain conditions, special service requirements, traffic patterns, parking availability, safety, and maintenance of contiguous addresses within a route. Additionally, the ability to defer delivery of some volumes also permits carriers to balance their workloads (and loop weights) over time. As a result, Baron proposes a zero variability associated with routine loops, and Crowder states that the new ES satchel data provides quantitative support to her operational explanation of why routine-loop-related time does not vary with mail weight.

In sum, all the available conceptual and operational evidence supports an estimate of zero variability of drive time associated with routine dismounts and loops. This estimate should be adopted by the Commission.



VI. ATTRIBUTION OF THE POSSIBLE DELIVERIES EFFECT FROM THE LOAD TIME MODEL IS INCORRECT, BECAUSE THE IMPACT OF ACTUAL DELIVERIES ON LOAD TIME IS ALREADY REFLECTED IN THE VOLUME EFFECT

Regardless of the Load Time Model used by witness Baron, he incorrectly attributes the effect of Possible Deliveries on Load Time.<sup>15</sup> This is extremely surprising, since the Commission in Docket No. R97-1 has already rejected Baron's attempt to attribute the "deliveries effect," clearly and correctly recognizing that: (a) the "possible deliveries" variable in the LTV model is simply a "control variable" (PRC Op. R97-1, ¶¶ 3287-90), and (b) "[t]he volume coefficients in the LTV models reflect all of the within-stop load time changes caused by volume, both the direct (elemental) changes and the indirect (deliveries-coverage) changes" (*id.*).

The inappropriateness of Baron's attribution of the deliveries effect, regardless of which Load Time models are used, is addressed by Crowder. As in Docket No. R97-1, she explains that the possible deliveries variable is a control variable used to ensure that the volume-related coefficients (that subsequently become part of the volume variability calculation) are not biased. The need for the possible deliveries control variable is the same for both the LTV and ES Load Time models. Further, she explains that the coefficients on the volume variables pick up all load time effects caused by volume and these effects include both: (a) the direct changes in load time resulting from changes in volume per delivery, when actual deliveries stay constant (i.e., the elemental effect), and (b) the indirect load time changes resulting from changes in the number of actual deliveries (i.e., the coverage-related effect). Both the direct and indirect effects on load time from a

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<sup>15</sup> In both the LTV MDR and B&M stop-level models and the new ES route-level model, Baron incorrectly interprets the load time effect from possible deliveries as an actual deliveries effect, which is volume variable. Thus, he calculates the variability of load time with respect to possible deliveries and mistakenly considers this to be part of total volume variability.

volume change are necessarily captured by the statistically significant volume coefficients in the LTV and ES models. In contrast, the possible deliveries variable in the models does not reflect any volume effects but is simply a control variable since the number of possible deliveries affects the number of actual deliveries, leaving volume constant.<sup>16</sup> Tr. 32/19191-93 and Docket No. R97-1, JP-NOI-1, Attachment C.

Accordingly, the Postal Service proposal to attribute the possible deliveries effect amounts to a double-counting of volume-variable load time costs and should be rejected for the same reasons it was rejected in Docket No. R97-1.

### CONCLUSION

For the reasons discussed herein, the undersigned parties urge the Commission to recognize the grave inadequacy of the ES Study as a basis for carrier cost attribution and to strike from the record the testimony of witnesses Raymond and Baron's testimony purporting to adapt the ES Study for that purpose. If Raymond's and Baron's testimony is permitted to remain in evidence, we urge the Commission to reject the substance of that testimony on the merits and to decline to use the ES Study for carrier costing purposes.

Should the Commission nonetheless decide to use the ES Study as a basis for carrier cost attribution, methodological rationality requires that the corresponding volume variabilities and accrued cost adjustments developed from

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<sup>16</sup> In rebuttal, Baron claims that since Crowder considered possible deliveries as a proxy for the workload measures of volume and actual deliveries (which were unavailable) in her ES regression model, she should have no objection to his decision to interpret possible deliveries as a proxy for just actual deliveries alone. Tr. 43/18712. But that is completely untrue. In response to USPS/MPA-T5-25(e), Crowder clearly stated that possible deliveries could be used as a proxy for actual deliveries "only if the volume variable is omitted. If the volume variable is part of the regression equation, then possible deliveries act as a control variable to allow the volume effects on load time to be accurately determined." Tr. 32/16275.

the same data also be used. All pertinent record evidence confirms this conclusion, and no participant has questioned it.

Additionally, we urge the Commission to accept the unchallenged testimony of witnesses Baron, Nelson, and Crowder demonstrating zero volume variability for drive time associated with routine dismounts and loops.

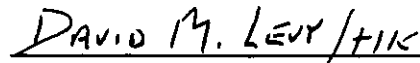
Finally, based on the cogent analysis provided in witness Crowder's rebuttal testimony, and for the same reasons it did so in Docket No. R97-1, we urge the Commission to reject witness Baron's inappropriate attribution of the effect of possible deliveries on load time.

Respectfully submitted,



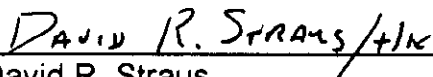
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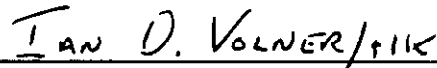
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CERTIFICATE OF SERVICE

I hereby certify that I have this date served the foregoing document on all participants of record in this proceeding in accordance with sections 12, 25(a), and 26(a) of the Rules of Practice.

Timothy L. Keegan  
Timothy L. Keegan

September 13, 2000